

## *Astragalus lachungensis* (Fabaceae), a New Species from Sikkim Himalaya, India

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A new species, *Astragalus lachungensis* is described and illustrated from Sikkim Himalaya, India. The diagnostic characters and description of the species are provided. The new species is also compared with its closely allied species *A. donianus*.

**Key words:** *Astragalus lachungensis*, Fabaceae, India, new species.

In the course of revising *Astragalus* L. of India, the author collected some interesting specimens of the genus from Sikkim Himalaya. After thorough study of specimens and literature (Baker 1876, Ali 1961, 1977, Grierson and Long 1987, Wenninger 1992, Sanjappa 1992, Podlech 1999, 2001, Kumar and Sane 2003, Podlech and Xu 2004), it was realized that they were new to science. The study of herbarium specimens at CAL revealed that the species had already been collected in the year 1884 from Sikkim, and was named *A. pycnorhizus* var. *grandiflora* without authority or description. The new species is related to the widespread *A. donianus* DC. (= *A. pycnorhizus* Wall. ex Benth.), but differs in a number of characters shown in Table 1 and the two co-exist in the same locality. The new species is described and illustrated below.

***Astragalus lachungensis*** Chaudhary, sp. nov. [Figs. 1, 2]

Differt ab *Astragalus donianus* caule radicans ad nodum, pedunculi 16–35 mm longi, breviter quam folia, 1-flori, calyx 7–10 mm longus, tubularis-campanulatus,

tubus 5–7 mm longus, dentibus 2–3 × ca. 2 mm, oblongus-ovatus, acutus, petalis caerulei-violaceis, stamina diadelphus (9 + 1), vexillaris filum liber, leguminibus 22–24 × 12–13 mm.

Type: India, Sikkim, Lachung, between Lachung and Yumthang, ca. 15 km away from Yumthang, 3300 m, 15. 8. 2004, L. B. Chaudhary 225079 (LWG–holo; CAL–iso).

Paratypes: INDIA, Sikkim, Without Locality, 29. 10 1884, G. King's collector s. n. (CAL 1135554, 113555, 113556, 113557, 113558, 113559, 113560).

Prostrate herbs, up to 30 cm long, caespitose, stem slender, partially reddish, rooting at nodes in lower portion, glabrous to glabrescent, internodes longer than stipules. Stipules 1–2 × 1–2 mm, free or slightly connate at base on the back of petiole, encircling the stem, ovate, acute or subobtusate at apex, irregularly dentate along margins with glandular structure, glabrous. Leaves 3–7 cm long, imparipinnately compound; petioles ca. 15 mm long; rachis and petiole partially reddish, glabrous to moderately white-adpressed-hairy; leaflets 9–17, 5–8 × 2.5–4.5 mm, oblong-obovate, oblong-ovate or

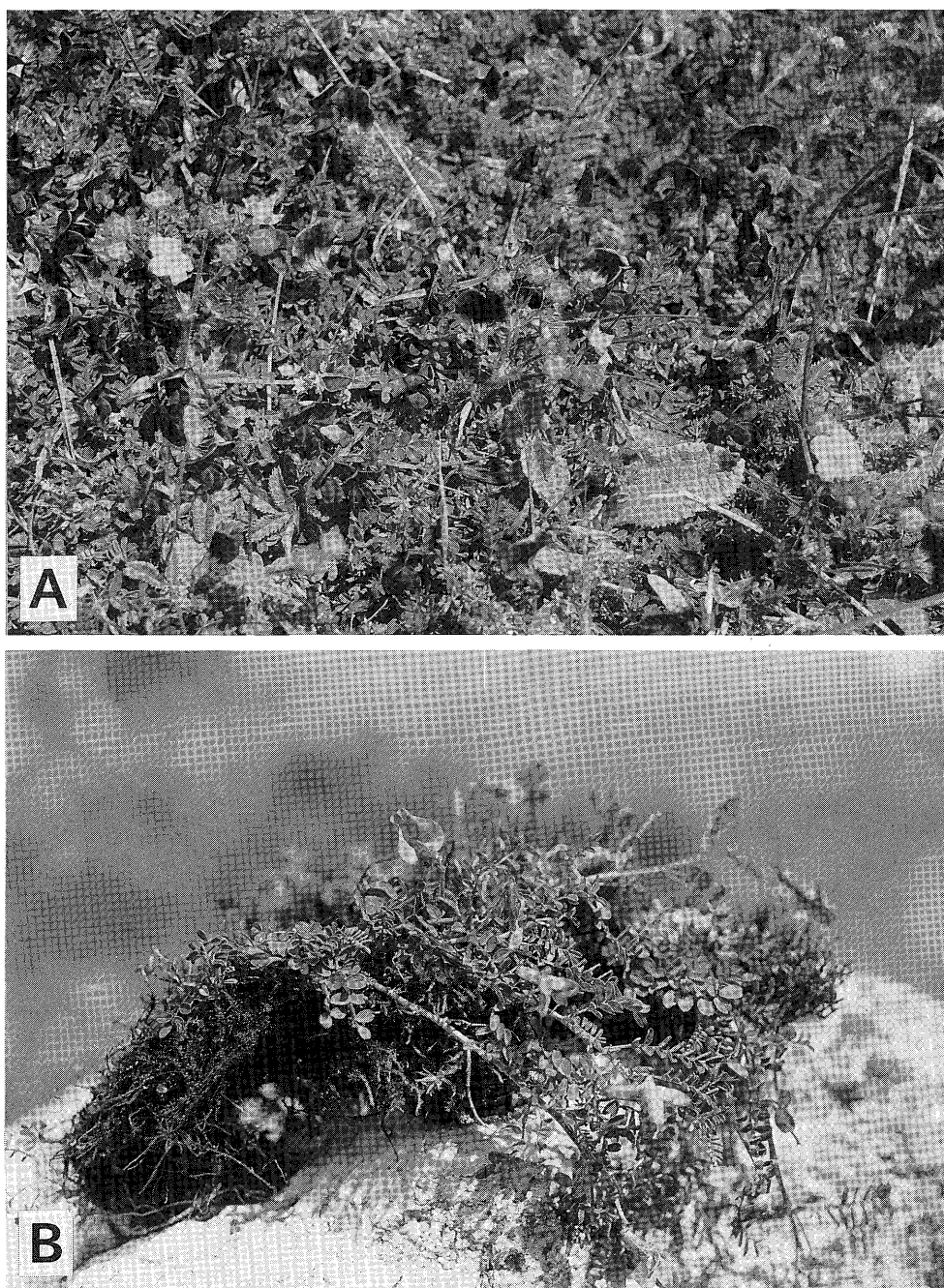


Fig. 1. A: *Astragalus donianus* DC. B: *A. lachungensis* Chaudhary.

Table 1. Comparison of *Astragalus donianus* and *A. lachungensis*

	<i>A. donianus</i>	<i>A. lachungensis</i>
Stem	not rooting at nodes	rooting at lower nodes
Peduncle	17–50 mm long, longer than subtending leaf, 1–2-flowered	16–35 mm long, shorter than subtending leaf, 1-flowered
Flower color	dark brownish-purple	bluish-violet
Calyx	6–7 mm long, campanulate, tube 2.5–4 mm long, teeth 2.5–3 × 1 mm, more or less equal to tube, ovate-lanceolate with acuminate apex, glands present along margins	7–10 mm long, tubular-campanulate, tube 5–7 mm long, teeth 2–3 × ca. 2 mm, shorter than tube, oblong-ovate with acute apex, glands not present along margins
Standard	lamina suborbicular, 12–15 × 11–13 mm, claw ca. 3 mm long	lamina orbicular, ca. 10 × 10 mm, claw ca. 6 mm long
Wing petal	subequal to keel petals	shorter than keel petals
Stamen	monadelphous, completely closed	diadelphous, (9 + 1), vexillary filament free, staminal sheath slit on dorsal side
Pod	9–18 × 4–9 mm, stipe 1–2 mm long	22–24 × 12–13 mm, stipe ca. 3 mm long

oblong-elliptic, cuneate or subobtusate at base, retuse or emarginate at apex, glabrous above, pubescent with white, adpressed, flat hairs below. Inflorescence axillary, peduncled, 1-flowered; peduncle 16–35 mm long, shorter than subtending leaf, partially reddish, pubescent with minute, white, adpressed hairs. Bracts 1.5–2.5 × 1–2 mm, equal to or slightly shorter than pedicel, submembranous, persistent, encircle the pedicel, broadly ovate, dentate along margins with some glandular structure, acute at apex, glabrous. Bracteoles 2, minute, situated at the tip of pedicel, in other details similar to bracts. Flowers 16–18 mm long (excluding pedicel), bluish-violet; pedicel ca. 2–2.5 mm long, pubescent with mixed black and white or light brown, adpressed hairs. Calyx 7–10 mm long, persistent, tubular-campanulate, partially reddish, pubescent with minute, light brown, adpressed hairs outside, glabrous inside except teeth; tube 5–7 mm long, teeth 2–3 × ca. 2 mm, shorter than tube, oblong-ovate, acute at apex, densely black hairy inside. Petals glabrous; standard 16–18 mm long, backwardly deflexed, lamina ca. 10 × 10 mm, orbicular, emarginate at apex, claw ca. 6 mm long; wing petals 12–

15 mm long, shorter than standard and keel petals, lamina ca. 8.5 × 3 mm, oblong-ovate, obtuse at apex, claw ca. 5.5 mm long; keel petals 14–18 mm long, shorter than or subequal to standard, lamina ca. 9 × 5 mm, oblong-obovate, obtuse at apex, claw ca. 7 mm long. Stamens diadelphous, (9 + 1); vexillary filament ca. 12.5 mm long, free; staminal sheath ca. 12 mm long, obtuse at apex, free filaments 1.5–2 mm long. Ovary 6–7 mm long, stipitate (stipe 2.5–3 mm long), finely pubescent with adpressed, mixed white and brown hairs; style 6–7 mm long, incurved towards apex, bearded near the apex on the inner side; stigma capitate, penicillate. Pods 22–24 × 12–13 mm (excluding stipe and apical narrow portion), stipitate (stipe ca. 3 mm long), oblong, abruptly narrowed at both ends, inflated, unilocular, pubescent with minute, brown, adpressed hairs. Seeds ca. 1.5 × 1 mm, reniform, subtergoid, smooth, black.

Ecology: Gregarious on rocks on the substratum of thick, moist bed of mosses on hill slope in open.

Phenology: August to October.

Etymology: Named after the type locality Lachung in North Sikkim.

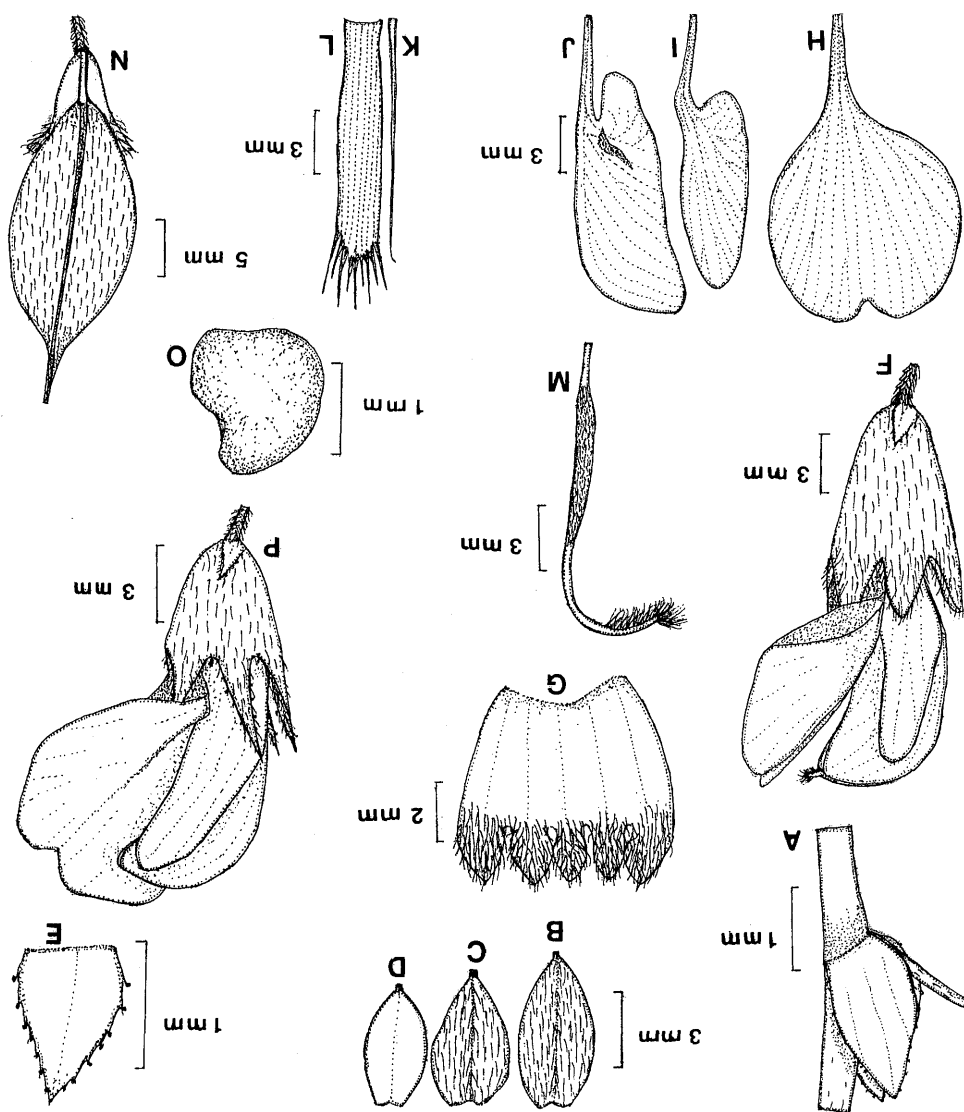


Fig. 2. *Astragalus lachungensis* Chaudhary. A: Stipules with a portion of stem. B-D: Leaflets (B, C: lower surface, D: upper surface). E: Bract. F: Flower. G: Calyx (opened, inside). H: Standard. I: Wing petal. J: Keel petal. K: Vexillary filament. L: Staminal sheath (opened). M: Carpel. N: Pod. O: Seed. A. *donianus* DC. P: Flower (A-M from Chaudhary 225079, N-O from G. King's collector s. n., P from Smith & Cave 2774).

*Astragalus lachungensis* differs from its closely allied species *A. donianus* chiefly in flower colour, calyx, stamens and pods. In the former, the flowers are bluish-violet (Fig. 1B), calyxes are 7–10 mm long with teeth longer than tube, oblong-ovate, ca. 2 mm wide with an acute apex, stamens are diadelphous (9 + 1) with completely free vexillary filament and pods are 22–24 mm long and 12–13 mm wide. In *A. donianus* the

flowers are dark brownish-purple (Fig. 1A), calyx are 6–7 mm long with teeth are more or less equal to tube, ovate-lanceolate, ca. 1 mm wide and acuminate apex, stamens are completely fused into a single closed bundle (i. e., monadelphous) and pods are 9–18 mm long and 4–9 mm wide.

*Astragalus lachungensis* is endemic to Sikkim. It was first collected from Sikkim more than 100 years ago. After that this species was not collected in recent years as it is evident from the study of herbarium specimens housed at BSHC, LBG, CAL, BSD, DD, LWG, CDRI. During a recent plant collection tour to Sikkim Himalaya conducted in August 2004, the species was noticed only in one locality in a very small patch. It seems propagation of the species is very slow and it should be treated as Critically Endangered.

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L. B. チョーダリ：シッキム・ヒマラヤ産マメ科ゲンゲ属の1新種

シッキム・ヒマラヤから新種 *Astragalus lachungensis* Chaudhary を記載した。本種は *A. donianus* DC. に近いが、表1に示したように花梗

長や花色、萼の形、莢の形などが異なる。

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